

**AMENDMENTS TO THE CLAIMS:**

1. (Canceled) A coal additive for reducing a pollutant emission, the additive comprising: a plant oil extract; an antioxidant; and a thermal stabilizer.
2. (Canceled) The coal additive of claim 1, wherein the plant oil extract comprises an oil extract of a plant of the Leguminosae family.
3. (Canceled) The coal additive of claim 1, wherein the plant oil extract is selected from the group consisting of oil extract of vetch and oil extract of barley.
4. (Canceled) The coal additive of claim 1, wherein the plant oil extract comprises chlorophyll.
5. (Canceled) The coal additive of claim 1, wherein the antioxidant comprises  $\beta$ -carotene.
6. (Canceled) The coal additive of claim 1, wherein the thermal stabilizer comprises jojoba oil.
7. (Canceled) The coal additive of claim 1, wherein the thermal stabilizer comprises an ester of a C20-C22 straight chain monounsaturated carboxylic acid.
8. (Canceled) The coal additive of claim 1, wherein the plant oil extract comprises oil extract of vetch, wherein the antioxidant comprises  $\beta$ -carotene, and wherein the thermal stabilizer comprises jojoba oil.
9. (Canceled) The coal additive of claim 1, further comprising a diluent.

10. (Canceled) The coal additive of claim 9, wherein the diluent is selected from the group consisting of toluene, gasoline, diesel fuel, jet fuel, and mixtures thereof.
11. (Canceled) The coal additive of claim 1, further comprising an oxygenate.
12. (Canceled) The coal additive of claim 11, wherein the oxygenate is selected from the group consisting of methanol, ethanol, methyl tertiary butyl ether, ethyl tertiary butyl ether, and tertiary amyl methyl ether, and mixtures thereof.
13. (Canceled) The coal additive of claim 1, further comprising at least one additional additive selected from the group consisting of detergents, corrosion inhibitors, metal deactivators, dispersants, antioxidants, demulsifiers, carrier fluids, solvents, emission reduction additives, and mixtures thereof.
14. (Canceled) The coal additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is from about 0.25:1 to about 4:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is from about 0.25:1 to about 4:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is from about 0.25:1 to about 4:1.
15. (Canceled) The coal additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is from about 4:3 to about 2:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is from about 2:1 to about 3:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is from about 1:3 to about 4:3.

16. (Canceled) The coal additive of claim 8, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the additive is about 5:3, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the additive is about 2.5:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the additive is about 2:3.
17. (Canceled) The coal additive of claim 1, comprising a diluent, about 3 g  $\beta$ -carotene per 4000 ml of additive, about 5 g oil extract of vetch per 4000 ml of additive, and about 2 ml of jojoba oil per 4000 ml of additive.
18. (Canceled) A coal, the coal comprising an additive for reducing a pollutant emission, the additive comprising: a plant oil extract; an antioxidant; and a thermal stabilizer.
19. (Canceled) The coal of claim 18, wherein the plant oil extract comprises an oil extract of a plant of the Leguminosae family.
20. (Canceled) The coal of claim 18, wherein the plant oil extract is selected from the group consisting of oil extract of vetch and oil extract of barley.
21. (Canceled) The coal of claim 18, wherein the plant oil extract comprises chlorophyll.
22. (Canceled) The coal of claim 18, wherein the antioxidant comprises  $\beta$ -carotene.
23. (Canceled) The coal of claim 18, wherein the thermal stabilizer comprises jojoba oil.
24. (Canceled) The coal of claim 18, wherein the thermal stabilizer comprises an ester of a C20-C22 straight chain monounsaturated carboxylic acid.

25. (Canceled) The coal of claim 18, wherein the plant oil extract comprises oil extract of vetch, wherein the antioxidant comprises  $\beta$ -carotene, and wherein the thermal stabilizer comprises jojoba oil.
26. (Canceled) The coal of claim 18, further comprising a diluent.
27. (Canceled) The coal of claim 26, wherein the diluent is selected from the group consisting of toluene, gasoline, diesel fuel, jet fuel, and mixtures thereof.
28. (Canceled) The coal of claim 18, wherein the coal comprises a dry powder.
29. (Canceled) The coal of claim 18, wherein the coal comprises a briquette.
30. (Canceled) The coal of claim 18, wherein the coal comprises a suspension of a powder in a liquid.
31. (Canceled) The coal of claim 25, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the coal is from about 0.25:1 to about 4:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the coal is from about 0.25:1 to about 4:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the coal is from about 0.25:1 to about 4:1.
32. (Canceled) The coal of claim 25, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the coal is from about 4:3 to about 2:1, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the coal is from about 2:1 to about 3:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the coal is from about 1:3 to about 4:3.

33. (Canceled) The coal of claim 25, wherein a ratio of grams of plant oil extract of vetch to grams of  $\beta$ -carotene in the coal is about 5:3, wherein a ratio of grams of oil extract of vetch to milliliters jojoba oil in the coal is about 2.5:1, and wherein a ratio of milliliters jojoba oil to grams of  $\beta$ -carotene in the coal is about 2:3.
34. (Canceled) The coal of claim 25, wherein the coal comprises from about 0.1 to about 50 ml of jojoba oil per 1000 kg of coal, from about 0.1 to about 50 g of oil extract of vetch per 1000 kg of coal, and from about 0.1 to about 100 g of  $\beta$ -carotene per 1000 kg of coal.
35. (Canceled) The coal of claim 25, wherein the coal comprises from about 1 to about 10 ml of jojoba oil per 1000 kg of coal, from about 2 to about 10 g of oil extract of vetch per 1000 kg of coal, and from about 2 to about 30 g of  $\beta$ -carotene per 1000 kg of coal.
36. (Canceled) The coal of claim 25, wherein the coal comprises from about 1.9 to about 5.7 ml of jojoba oil per 1000 kg of coal, from about 3.4 to about 4.3 g of oil extract of vetch per 1000 kg of coal, and from about 4.7 to about 14.3 g of  $\beta$ -carotene per 1000 kg of coal.
37. (Canceled) The coal of claim 25, wherein the coal comprises about 1.9 ml of jojoba oil per 1000 kg of coal, about 3.4 g of oil extract of vetch per 1000 kg of coal, and about 4.7 g of  $\beta$ -carotene per 1000 kg of coal.
38. (Canceled) The coal of claim 25, wherein the coal comprises about 5.7 ml of jojoba oil per 1000 kg of coal, about 4.3 g of oil extract of vetch per 1000 kg of coal, and about 14.3 g of  $\beta$ -carotene per 1000 kg of coal.
39. (Previously presented) A coal additive comprising

a plant oil extract derived from grain;

a carotenoid; and

a thermal stabilizer.

40. (Previously presented) The additive of claim 39, wherein the grain is selected from the group consisting of fescue, clover, wheat, barley, oats, rye, sorghum, flax, triticale, rice, corn, spelt, millet, amaranth, buckwheat, quinoa, kamut and teff.
41. (Previously presented) The additive of claim 39 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
42. (Previously presented) The additive of claim 39, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof.
43. (Previously presented) The additive of claim 39 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
44. (Previously presented) The additive of claim 39 wherein the thermal stabilizer is meadowfoam oil.
45. (Previously presented) The additive of claim 39 further comprising a diluent.
46. (Currently amended) The additive of claim 45 ~~39 wherein the diluent is further comprising a solvent~~ selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, coal, jet fuel, coal, 2 cycle oil, resid fuel and mixtures thereof.
47. (Previously presented) The additive of claim 39 further comprising at least one additive selected from the group selected

from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

48. (Currently amended) A coal additive comprising:

a hydrophobic plant oil extract;

a carotenoid; and

a thermal stabilizer selected from the group consisting of peanut oil, cottonseed oil, rape seed oil, macadamia oil, avocado oil, palm oil, palm kernel oil, meadowfoam oil, ~~easter oil~~ and mixtures thereof.

49. (Previously presented) The additive of claim 48 wherein the plant oil extract is derived from a member of the Leguminosae family.

50. (Previously presented) The additive of claim 48 wherein the plant oil extract is derived from grain.

51. (Previously presented) The additive of claim 48 further comprising a diluent.

52. (Currently amended) The additive of claim ~~51~~ 48 ~~wherein the diluent is further comprising a solvent~~ selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, coal, jet fuel, coal, 2 cycle oil, resid fuel and mixtures thereof.

53. (Previously presented) The additive of claim 48 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion

inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

54. (Previously presented) The additive of claim 48, wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
55. (Previously presented) The additive of claim 48 wherein the plant oil extract is barley oil extract, and the carotenoid is  $\beta$ -carotene.
56. (Previously presented) The additive of claim 48 further comprising meadowfoam oil.
57. (Currently amended) A coal additive comprising;  
  
a plant oil extract selected from the group consisting of hops oil extract, fescue oil extract, barley oil extract, green clover oil extract, wheat oil extract and mixtures thereof;  
  
a carotenoid; and  
  
a thermal-stabilizerstabilizer.
58. (Previously presented) The additive of claim 57 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
59. (Previously presented) The additive of claim 57, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof.



60. (Previously presented) The additive of claim 57 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
61. (Previously presented) The additive of claim 57 wherein the thermal stabilizer is meadowfoam oil.
62. (Previously presented) The additive of claim 57 further comprising a diluent.
63. (Currently amended) The additive of claim ~~62~~ 57 wherein the ~~diluent is further comprising a solvent~~ selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, coal, jet fuel, coal, 2 cycle oil, resid fuel and mixtures thereof.
64. (Previously presented) The additive of claim 57 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.
65. (Canceled) The additive of claim 57 wherein the plant oil extract is barley oil extract, and the carotenoid is  $\beta$ -carotene.
66. (Currently amended) A coal comprising a base fuel and at least one ~~addition-~~ additive wherein the additive comprises:
- a plant oil extract derived from grain;
  - a carotenoid; and
  - a thermal stabilizer.

67. (Previously presented) The coal of claim 66, wherein the grain is selected from the group consisting of fescue, clover, wheat, barley, oats, rye, sorghum, flax, triticale, rice, corn, spelt, millet, amaranth, buckwheat, quinoa, kamut and teff.
68. (Previously presented) The coal of claim 66 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
69. (Previously presented) The coal of claim 66, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof.
70. (Previously presented) The coal of claim 66 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
71. (Previously presented) The coal of claim 66 wherein the thermal stabilizer is meadowfoam oil.
72. (Previously presented) The coal of claim 66 further comprising a diluent.
73. (Previously presented) The coal of claim 66 further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, coal, jet fuel, coal, 2 cycle oil and resid fuel and mixtures thereof.
74. (Previously presented) The coal of claim 66 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers,

carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

75. (Canceled) The coal of claim 66 wherein the plant oil extract is barley oil extract, the carotenoid is  $\beta$ -carotene.
76. (Currently amended) A coal comprising a base fuel and at least one ~~addition~~ additive wherein the additive comprises:
- a hydrophobic plant oil extract;
  - a carotenoid; and
  - a thermal stabilizer selected from the group consisting of peanut oil, cottonseed oil, rape seed oil, macadamia oil, avocado oil, palm oil, palm kernel oil, meadowfoam oil, ~~easter oil~~ and mixtures thereof.
77. (Previously presented) The coal of claim 76 wherein the plant oil extract is derived from a member of the Leguminosae family.
78. (Previously presented) The coal of claim 76 wherein the plant oil extract is derived from grain.
79. (Previously presented) The coal of claim 76 further comprising a diluent.
80. (Currently amended) The coal of claim ~~79- 76~~ 76 ~~wherein the diluent is further comprising a solvent~~ selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, coal, jet fuel, coal, 2 cycle oil and resid fuel and mixtures thereof.
81. (Previously presented) The coal of claim 76 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock

additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.

82. (Previously presented) The coal of claim 76, wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
83. (Previously presented) The coal of claim 76 wherein the plant oil extract is barley oil extract, the carotenoid is  $\beta$ -carotene.
84. (Currently amended) A coal comprising a base feed and at least one ~~addition~~ additive wherein the additive comprises:
- a plant oil extract selected from the group consisting of hops oil extract, fescue oil extract, barley oil extract, green clover oil extract, wheat oil extract and mixtures thereof;
- a carotenoid; and
- a thermal ~~stabilizer~~ stabilizer.
85. (Previously presented) The coal of claim 84 wherein the carotenoid is selected from the group consisting of  $\beta$ -carotene,  $\alpha$ -carotene, lycopene, leutin, betatene and mixtures thereof.
86. (Previously presented) The coal of claim 84, wherein the thermal stabilizer is selected from the group consisting of vegetable oils, nut oils, animal oils and mixtures thereof
87. (Previously presented) The coal of claim 84 wherein the plant oil extract is derived from barley and the carotenoid is  $\beta$ -carotene.
88. (Previously presented) The coal of claim 84 wherein the thermal stabilizer is meadowfoam oil.

89. (Previously presented) The coal of claim 84 further comprising a diluent.
90. (Currently amended) The coal of claim 84 ~~wherein the diluent is~~ further comprising a solvent selected from the group consisting of toluene, benzene, o-xylene, m-xylene, p-xylene, cyclohexanes, hexane, octanes, nonanes, coal, jet fuel, coal, 2 cycle oil and resid fuel and mixtures thereof.
91. (Previously presented) The coal of claim 90 further comprising at least one additive selected from the group selected from octane improvers, cetane improvers, detergents, corrosion inhibitors, metal deactivators, ignition accelerators, dispersants, anti-knock additives, anti-run-on additives, anti-pre-ignition additives, anti-misfire additives, anti-wear additives, antioxidants, demulsifiers, carrier fluids, solvents, fuel economy additives, emission reduction additives, lubricity improvers, oxygenates and mixtures thereof.
92. (Canceled) The coal of claim 84 wherein the plant oil extract is barley oil extract, the carotenoid is  $\beta$ -carotene.